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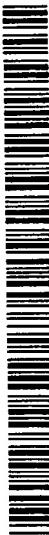
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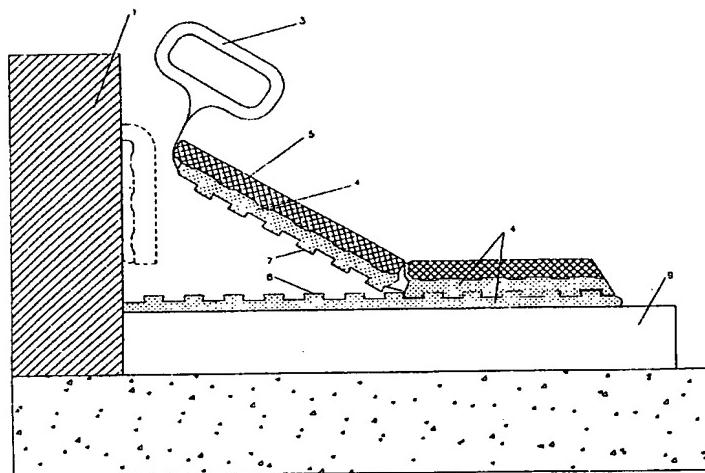
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(54) Title: METHOD OF LAYING FLOORS AS WELL AS THEIR PULLING AWAY IN CASE OF THEIR REPLACEMENT,  
AND MEANS FOR CARRYING OUT THE SAME



**WO 01/69007 A1**

(57) Abstract: A method of laying floors and linings so as to allow their quick removal and replacement makes use of a fixed support means and a movable support means that are fitted to each other in a removable manner, the first means being fixed to the sheeting, while floors or linings (5) are glued on said second support means so that, if necessary, the movable support means can be removed from the fixed support means. According to the invention, two members having the same shape are used as fixed support means and movable support means, the first means being rigidly fixed to the support sheeting, the second means being fitted to the first means in a removable manner, floors or linings being glued on said second support means. This is achieved by using two fret-shaped sheaths having the same shape as fixed and movable support means.

METHOD OF LAYING FLOORS AS WELL AS THEIR PULLING AWAY IN CASE OF THEIR  
REPLACEMENT, AND MEANS FOR CARRYING OUT THE SAME

The present invention relates to building and, more particularly, an improved method for laying floors and/or linings of any kind so as to allow their next quick removal for the replacement thereof and laying down a new one, without the necessity of a restoration of the underlying sheeting.

Usually, the replacing of floors and tiles, majolica and like linings, but also moquette, parquet or wall-papers requires destructive interventions to remove the same and sometime the support sheeting by means of tools and/or electric or pneumatic percussion machines, with obvious disagreeable consequences, such as noise, dust and waste, as well as increase in cost and time of demolition.

Italian Patent Application No. RM98A000450 filed on July 3, 1998 in the name of the same applicant discloses a laying method which allows a quick removal of the floor or the lining from the underlying sheeting and the next laying of a new floor or lining. To this end, there is provided the use of fixed and movable support members which are engaged with each other in a removable manner upon laying: the first one being secured to the sheeting, whereas the floor or

lining is glued on the second one so that, if necessary, it may be detached from the fixed support member by acting on corresponding handles arranged along the perimetrical rim of the movable support  
5 member.

Even if the desired results are attained, said known method has the drawback of requiring the use of fixed and movable supports which are provided with contact surfaces engaged with each other and different from  
10 each other and suitably manufactured to this purpose.

A first object of the invention is to avoid such drawback by using two members having the same shape as fixed and movable supports: one member rigidly fixed  
15 to the sheeting and the other one engaged with the first one in a removable manner, a floor or lining being then glued thereon.

A second object of the invention is to provide engagement means which are removable from one another  
20 and capable of forming perspiration ducts for the underlying sheeting and/or glue.

A third object of the invention is to provide anchoring means capable of reducing the tearing resistance when it is necessary to remove the floor or  
25 the lining from the underlying support sheeting.

A fourth object of the invention is to provide anchoring means which may easily be folded upwards and downwards along the edges of the floor or lining.

Said objects have been attained by employing two fret-shaped sheaths having the same shape as fixed and  
30

movable supports.

The invention will be better understood from the following detailed disclosure with reference to the accompanying drawings which show a not limiting example of an embodiment thereof and some alternative embodiments.

In the drawings:

10 Figure 1 shows schematically a perspective view of the sheaths to be placed upon each other and engaged with each other;

15 Figure 2 shows the invention as applied to a floor to be replaced;

Figure 3 similar to Figure 2 shows a second embodiment of the invention.

20 Figure 4 shows a perspective view of a third embodiment of the invention.

Referring now to the drawings, a fret-shaped sheath of flexible plastic material according to the present invention is placed as double layer on a support sheeting 9 (which could either be a floor or a lining) so that fixed member 8 and movable member 7 having the same shape mutually engage to each other in a removable manner.

30 Preferably, said fret-shaped sheath 7, 8 has a cross-

section such that the substantially vertical walls of the grooving are slightly tilted so that any projecting portion has a dovetail-shaped outline which is particularly adapted to engage with the 5 corresponding grooving having a like outline or profile.

It should be emphasized that the use of one kind of support to make fixed member 8 and movable member 7 has obvious economical advantages guaranteeing at the 10 same time the requested functions such as quick removal of the floor or lining and next replacement thereof.

From the practical point of view, movable member 7 of the fret-shaped sheath preferably has projecting 15 portions with such a size as to allow an exact insertion into the corresponding grooving of fret-shaped fixed member 8.

Conveniently, the support or fixed lower sheath 8 may either be embedded in sheeting 9 upon its 20 manufacturing or secured thereto by gluing it by a conventional glue 4 for floors or linings 5.

A further advantage of the invention is that the requested functions can also be attained if floors or linings 5 are made of thin materials, such as 25 linoleum, moquette, wall-paper. In fact, sheaths or supports of the type described above provided with less deep grooving of the fret-shaped profile may also be used, thus attaining a more uniform surface able to provide a more homogeneous, continuous support.

30 A first alternative embodiment of the present

invention relates to the cross-section shape of the fret-shaped support or sheath disclosed above. With particular reference to Figure 3, it should be noted that said alternative embodiment of the invention 5 provides that the projecting portion of the fret-shaped sheath has a longitudinal groove 10 which is parallel to the sheath grooving.

Conveniently, when the two fixed and movable supports or sheaths 8 and 7 are coupled with each other, said 10 further groove 10 forms a duct 12 capable of assuring the perspiration of both lower support sheeting 9 and glue 4. To this end, according to the invention, small perspiration holes 11 which communicate with longitudinal ducts 12 ending at the wall which 15 delimits the floor are provided on the bottom of the grooving of fixed and movable portions 8 and 7.

It should be appreciated that such first alternative embodiment makes the removal easier as the support formed in such a way is more yielding upon removal, 20 therefore, the tearing resistance is considerably lower.

A second alternative embodiment shown in Figure 4 relates to the folding of the movable fret-shaped sheath 7 along the edges delimiting the floor. With 25 regard to this, it should be noted that the sheath disclosed above allows an easy folding along the parallel sides of the fret-shaped members, however, said folding is hindered at the other two sides by the fret-shaped members which form strengthening ribs 30 notwithstanding the deformations in the direction

perpendicular to the plane of the sheath.

To this end, in this second alternative embodiment it is provided at least one bellow-shaped portion 13 capable of being deformed which is preferably located 5 near the edge to be folded and extends transversally to the grooving of the fret-shaped sheath and is able to allow an easy upward and downward folding of the end portion of the sheath.

Conveniently, this alternative embodiment is 10 particularly useful, for instance, for the floorings of terraces where it is advisable to provide a "watertight basin" integral with the perimetrical walls of the terrace. Moreover, according to a 15 peculiar feature of the invention, the above-mentioned perspiration ducts 12 allow the evaporation of any condensate which could arise between flooring 5 and sheeting 9.

Such alternative embodiment is also useful for 20 balconies and projecting coverings where it is advisable to fold the ends of the sheath downwards to avoid a penetration of moisture into the sheeting and below the flooring.

A still further alternative embodiment of the invention provides a movable support or sheath 7 25 consisting of a particularly resistant non-woven fabric of the commercially available kind which is preferably preformed so as to have a contacting surface corresponding exactly to fixed sheath 8.

Finally, according to the present invention there are 30 provided perimetrical side cables made of a material

which is resistant to corrosion and moisture and provided with handles or hook 3 which are hidden, for instance, by a skirting board on wall 1 and allow movable sheath 7 to be pulled easily away from fixed 5 sheath 8 to remove floor or lining 5.

The method according to the present invention comprises the following steps:

- A. Securing fixed sheath 8 to support sheeting 9 during its manufacturing or thereafter by means of an 10 adhesive material 4 well known in the art;
- B. Positioning movable sheath 7 provided with perimetrical cables for its removal, and fitting it into fixed sheath 8;
- C. Gluing floor or lining 5 onto movable sheath 7;
- 15 D. Hiding hooks or handles 3 of the pulling cables behind the skirting board or the like.

Should floor or lining 5 be removed, a new floor or lining 5 can easily be placed by carrying out the above process step B, wherein the above-mentioned 20 movable sheath 7 consists of a flexible material like fixed sheath 8 or it is made of a non-woven fabric, preferably a preformed one.

From the operative point of view, it should be appreciated that, if upon first laying of the floor 25 fixed and movable sheaths are supplied already fitted with each other, process step B will advantageously be avoided and will only be necessary for the next laying of a new floor or lining 5 after the removal of the previous one.

30 Advantageously, according to the invention, it is also

possible to use a fixed sheath 8 of the kind shown in Figure 2 with a movable sheath 7 according to the first alternative embodiment shown in Figure 3. In this way, there may be formed perspiration ducts 12,  
5 even if a fixed support 8 which is particularly resistant to lining tearing stress and a new laying is provided.

The present invention has been disclosed and illustrated in its preferable embodiment and in some  
10 alternative embodiments, however, it should be understood that those skilled in the art will be able to carry out some functionally equivalent modifications and/or changes, without departing from the scope of the appended claims.

## CLAIMS

1. A method of laying floors or linings and their quick removal and replacement by gluing or fixing them onto means which are removable with respect to a support sheeting (9), characterized in that fixed support means (8) and movable support means (7) having substantially similar shapes are provided, the first means (8) being rigidly fixed to support sheeting (9), the second means (7) being fitted to first means (8) in a removable manner, and floors or linings (5) being glued on said second support means.  
10
2. The method according to claim 1, wherein said fixed (8) and movable (7) support means consist each of a fret-shaped sheath of flexible, resistant material and have substantially the same shape.  
15
3. The method according to claim 2, wherein the projecting portions of fret-shaped movable sheath (7) have such a size as to allow their fitting into corresponding hollow portions of fret-shaped fixed sheath (8), said projecting portion and said hollow portion having a dovetail cross section.  
20
4. The method according to claim 3, wherein said fret-shaped flexible sheath is arranged in double layers on support sheeting (9) so that fixed sheath (8) and movable sheath (7) are fitted to each other so as to  
25

be removable from each other.

5. The method according to claim 1, wherein fixed lower sheath (8) is either embedded in support sheeting (9) during its manufacturing or anchored thereto subsequently by gluing it on the sheeting by means of a glue (4) typically used for floors or linings (5).

10 6. The method according to claim 2, wherein in case of floors or linings (5) consisting of thin materials, such as linoleum, moquette or wall-papers, fixed (8) and movable (7) sheaths are provided with fret-shaped portions which are less projecting and less deep so as 15 to attain a more uniform surface adapted to attain a more homogeneous, continuous support.

7. The method according to claim 2, wherein said movable sheath (7) consists of a particularly 20 resistant non-woven fabric which is available on the market.

8. The method according to claim 7, wherein said movable sheath (7) of non-woven fabric has a contact 25 surface exactly fitting to the surface of fixed sheath (8).

9. The method according to claim 1, wherein perimetrical side cables are used, which are resistant 30 to corrosion and moisture and are provided with

handles (3) or hooking ends hidden for example in the skirting board of wall (1) and allowing movable sheath (7) to be easily pulled away from fixed sheath (8) to replace the floor or lining by a new one.

5

10. The method according to claim 9, comprising the following steps:

- A. Securing fixed sheath 8 to support sheeting 9 during its manufacturing or thereafter by means of an adhesive material 4 well known in the art;
- B. Positioning movable sheath 7 provided with perimetrical cables for its removal, and fitting it into fixed sheath 8;
- C. Gluing floor or lining 5 onto movable sheath 7;
- D. Hiding hooks or handles 3 of the pulling cables behind the skirting board or the like.

11. The method according to claim 10, wherein after removing a floor or lining (5), a new floor or lining (5) is laid starting from the process step B, said movable sheath (7) being either identical to fixed sheath (8) of flexible material or consisting of a resistant non-woven fabric.

25 12. The method according to claim 10, wherein in case fixed (7) and movable (8) sheaths are supplied already fitted to each other upon first laying thereof, the method is carried out by passing directly from step A to step C, thus avoiding process step B which is  
30 superfluous.

13. The method according to claim 3 or 4, wherein said fixed (8) and/or movable (7) support means have fret-shaped projecting portions provided with a longitudinal groove (10) parallel to the fret-shaped means so that when the two fixed (8) and movable (7) sheaths are coupled with each other, said further groove (10) forms a duct (12) which allows the perspiration of both underlying support sheeting (9) and adhesive material (4), small perspiration holes 10 (11) being provided to this end on the bottom of the grooves of the fret-shaped fixed (8) and movable (7) sheaths, said holes communicating with said longitudinal ducts (12) ending at the wall which delimits the floor or lining.

15

14. The method according to claim 13, wherein fret-shaped movable sheath (7) has at least one bellow-shaped portion capable of being deformed and provided near the edge to be folded perpendicular to the grooves of said fret-shaped sheaths, said portion being able to allow the end portion of movable sheath (7) to be easily folded upwards or downwards.

15. An anchoring means for laying floors and linings 25 and their quick removal and replacement according to the method of claim 1, wherein said anchoring means is formed by fixed support means (8) and movable support means (7) having substantially the same shape, the first means (8) being rigidly fixed to support sheeting (9), the second means (7) being fitted to

first means (8) in a removable manner, and floors or linings (5) being glued on said second support means.

16. The anchoring means according to claim 15, wherein  
5 said fixed (8) and movable (7) support means consist each of a fret-shaped sheath of flexible, resistant material and have substantially the same shape.

17. The anchoring means according to claim 15, wherein  
10 the projecting portions of fret-shaped movable sheath (7) have such a size as to allow their fitting into corresponding hollow portions of fret-shaped fixed sheath (8), said projecting portion and said hollow portion having a dovetail cross section.

15

18. The anchoring means according to claim 15, wherein  
said fixed (8) and/or movable (7) support means have  
fret-shaped projecting portions provided with a  
longitudinal groove (10) parallel to the fret-shaped  
20 means so that when the two fixed (8) and movable (7)  
sheaths are coupled with each other, said further  
groove (10) forms a duct (12) which allows the  
perspiration of both underlying support sheeting (9)  
and adhesive material (4), small perspiration holes  
25 (11) being provided to this end on the bottom of the  
grooves of the fret-shaped fixed (8) and movable (7)  
sheaths, said holes communicating with said  
longitudinal ducts (12) ending at the wall which  
delimits the floor or lining.

30

19. The anchoring means according to claim 15, wherein  
fret-shaped movable sheath (7) has at least one  
bellow-shaped portion capable of being deformed and  
provided near the edge to be folded perpendicular to  
5 the grooves of said fret-shaped sheaths, said portion  
being able to allow the end portion of movable sheath  
(7) to be easily folded upwards or downwards.

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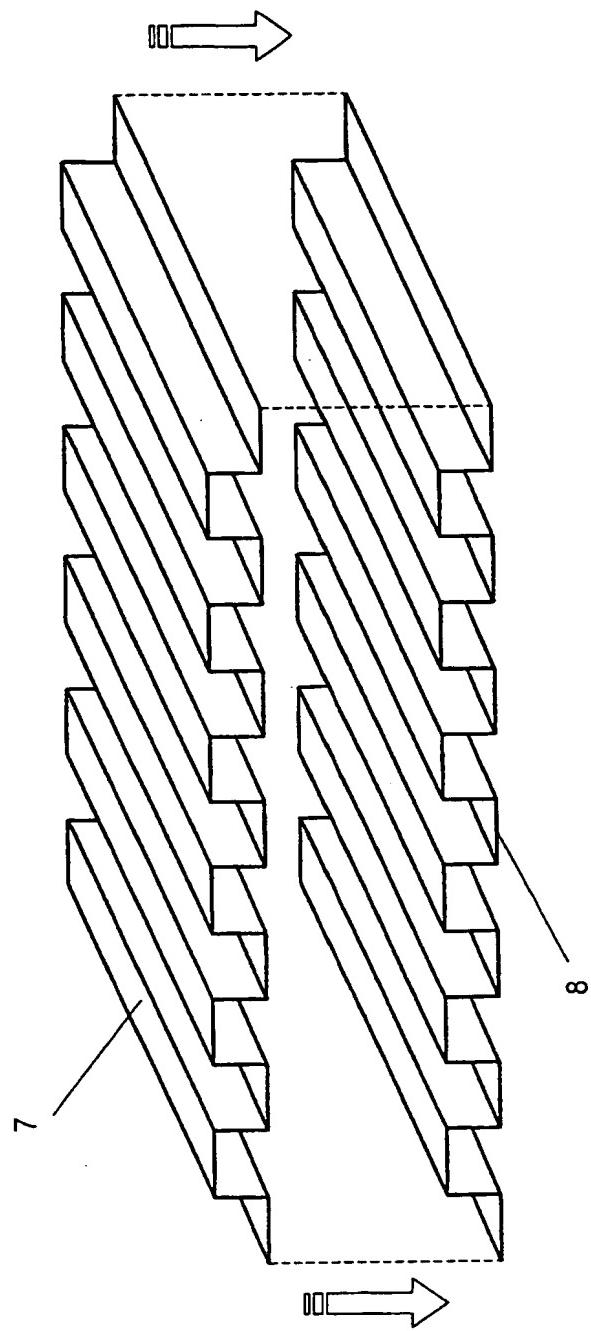


FIG. 1

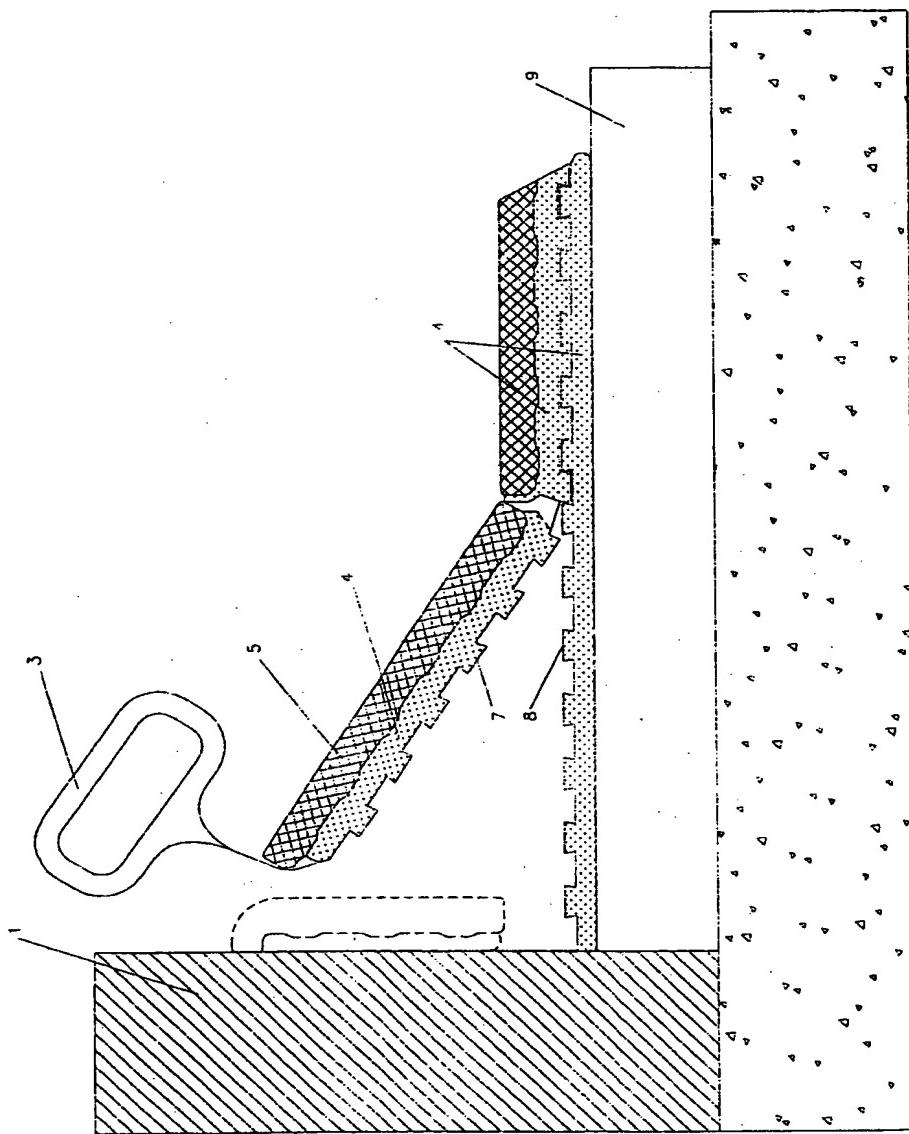


FIG. 2

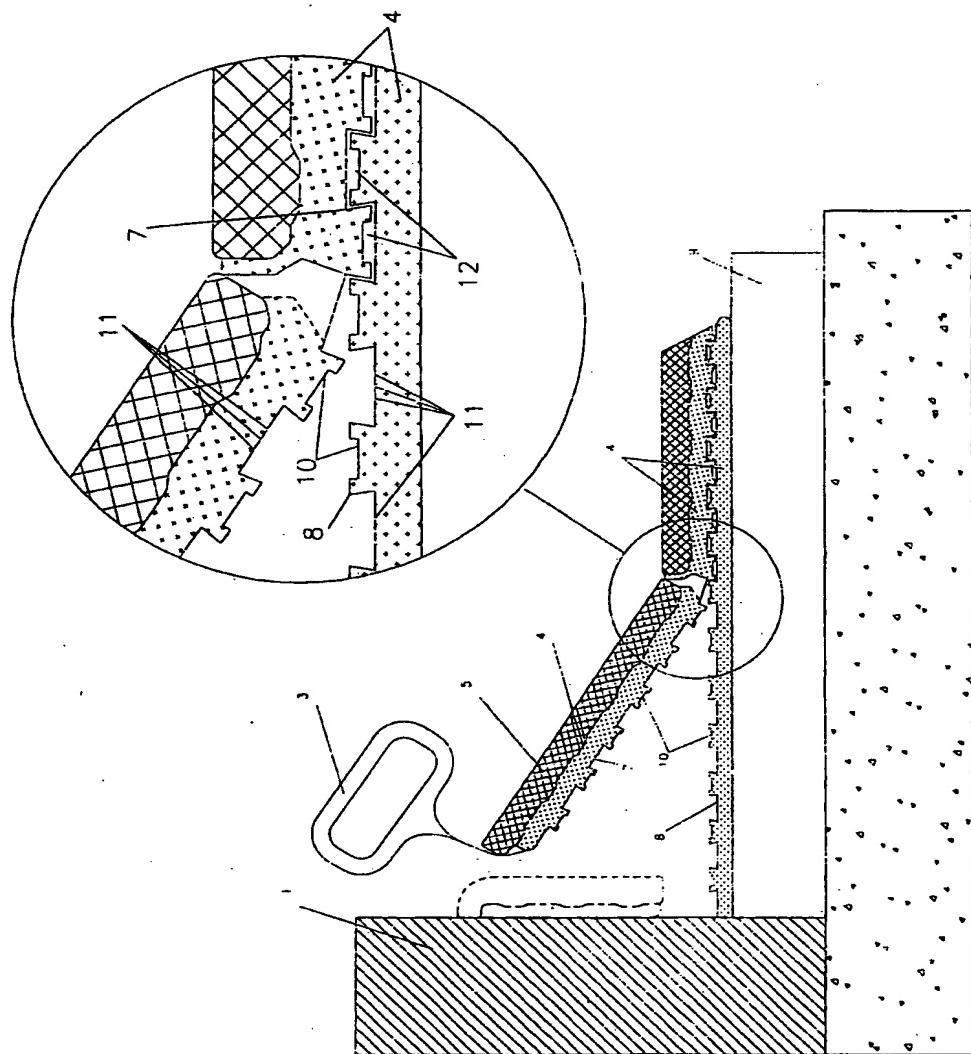


FIG. 3

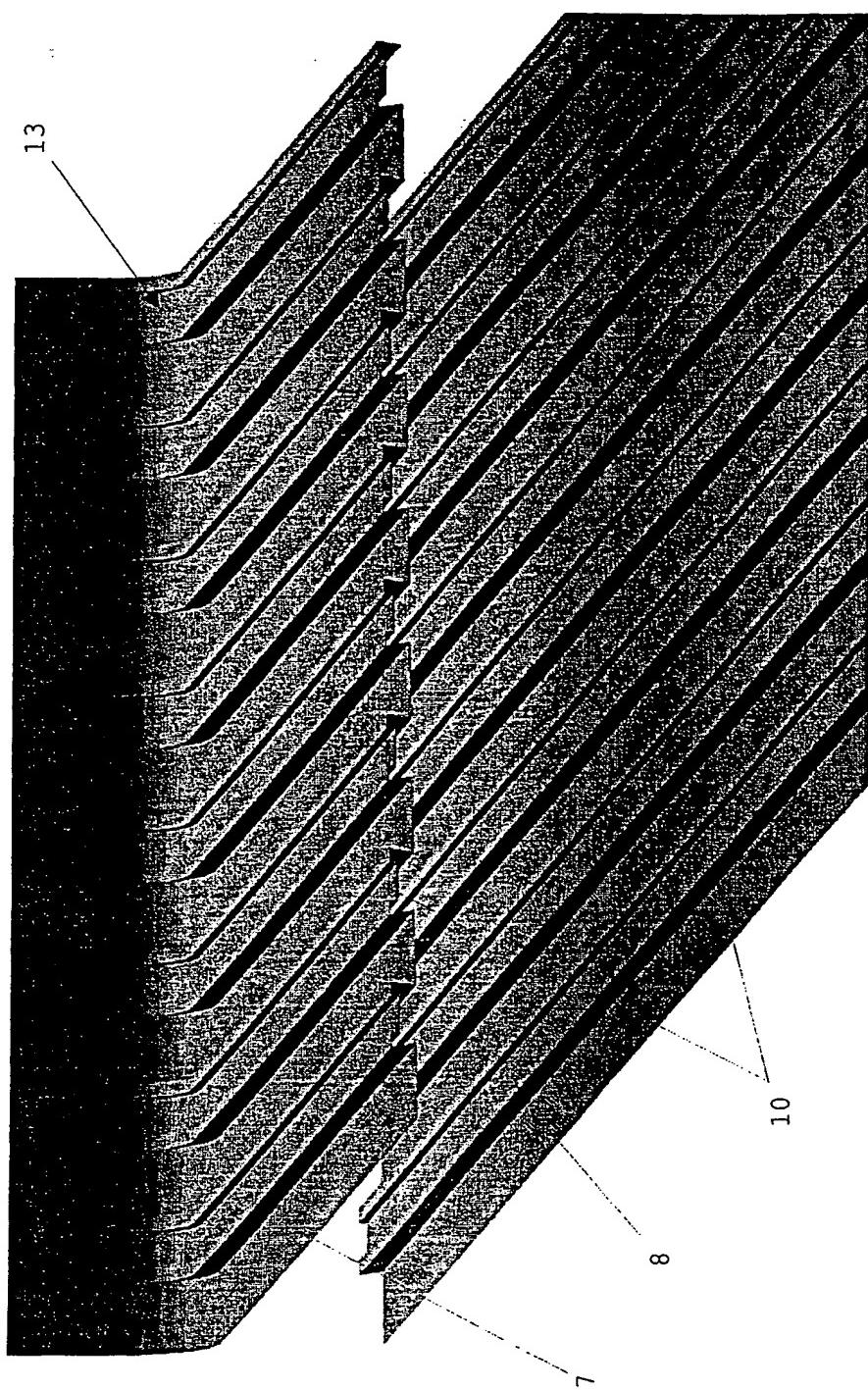


FIG. 4

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IT 01/00133

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 E04F15/02 E04F13/08 B32B7/06

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 E04F B32B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 34164 A (MARTINEZ SANTIAGO JOSE ANTONIO) 31 October 1996 (1996-10-31) page 13, line 16 -page 16, line 17; figures 6-11	1,2,5, 15,16
A	EP 0 969 162 A (RAINERI GABRIELE) 5 January 2000 (2000-01-05) cited in the application column 1, line 1 -column 2, line 58; figure 1	3,4,6
		1,5, 9-11,15

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

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Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 9634164	A 31-10-1996	ES	1030961 U	01-11-1995
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EP 0969162	A 05-01-2000	IT	RM980450 A	03-01-2000